

eMPower™ **ME**

STUDENT
SAMPLE ITEM BOOKLET

Mathematics

Grade 6





Developed and published by Measured Progress, 100 Education Way, Dover, NH 03820.
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Sample Items

Directions

Read each question and choose the best answer.

1. At a farm, $\frac{3}{8}$ of the cows have spots. There are 72 cows with spots. What is the total number of cows at the farm?

- A 27
- B 99
- C 192
- D 216

2. The cost of membership in a health club is given by this equation, where n is the number of months of membership and C is the total cost in dollars.

$$C = 40n + 25$$

Which situation is **best** described by the equation?

- A The membership costs \$25 per month, less a \$40 discount.
 - B The membership costs \$40 per month, less a \$25 discount.
 - C The membership costs \$25 per month, plus a fee of \$40.
 - D The membership costs \$40 per month, plus a fee of \$25.
3. In his stamp album, Jamal has 48 new stamps and 72 used stamps.

Which ratio can be represented by $\frac{3}{5}$?

- A The number of new stamps to the number of used stamps.
- B The number of new stamps to the total number of stamps.
- C The number of used stamps to the number of new stamps.
- D The number of used stamps to the total number of stamps.

4. Quadrilateral $MATH$ is a rectangle with vertex M located at $(-3, 5)$ and vertex T located at $(4, -2)$. Side MA is parallel to the x -axis.
- a. What are the coordinates of vertices A and H ? Show your work or explain your reasoning.
- Suppose quadrilateral $MATH$ is one face of a cube.
- b. What is the total surface area of the cube in square units? Show your work or explain your reasoning.

Use the information below to answer questions 5 and 6.

Look at this problem.

Samira went jogging on Saturday. She ran a total of 8.5 miles in 1.75 hours. Samira burned a total of 1,050 calories while jogging. Assume that she burned the same number of calories each hour while jogging.

Lucas also went jogging. He ran a total of 10 miles in 2.25 hours.

At what rate, in calories per hour, did Samira burn calories while jogging?

5. Which values from the given information are needed to answer the problem?
- A 10 and 2.25
- B 1.75 and 8.5
- C 1.75 and 1,050
- D 2.25 and 1,050
6. Which question **cannot** be answered with the given information?
- A What was the average rate, in miles per hour, at which Samira jogged?
- B What was the average rate, in miles per hour, at which Lucas jogged?
- C How many more calories per hour did Samira burn than Lucas?
- D Which person, on average, jogged more miles per hour?